

Serial No. 10/088,575

Reply to Office Action of August 22, 2005

AMENDMENTS TO THE CLAIMS

Claims 1-6 (Canceled)

7. (Currently Amended) A tubular coupling element for producing a glued joint with a fluid line, said tubular coupling element comprising:

an inner tube having a front end and a rear end, wherein said front end is insertable into a fluid line;

an outer tube having a front end and a rear end, wherein said outer tube is concentric to said inner tube and a length of the front end of said inner tube is longer than a length of the front end of said outer tube;

a linear connecting wall interconnecting said inner tube rear end and to said outer tube rear end, wherein said outer tube, said connecting wall and said inner tube define one cylindrically shaped annular gap; and

a solid ring of hot melt adhesive disposed within the annular gap and positioned against said connecting wall, such that said solid ring of hot melt adhesive occupies less than the full volume of the annular gap.

8. (Currently Amended) ~~The~~ A tubular coupling element of claim 7, for producing a glued joint with a fluid line, said tubular coupling element comprising:

an inner tube having a front end and a rear end, wherein said front end is insertable into a fluid line;

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an outer tube having a front end and a rear end, wherein said outer tube is concentric to said inner tube and a length of the front end of said inner tube is longer than a length of the front end of said outer tube;

a linear connecting wall interconnecting said inner tube rear end and said outer tube rear end, wherein said outer tube, said connecting wall and said inner tube define one cylindrically shaped annular gap; and

a solid ring of hot melt adhesive disposed within the annular gap and positioned against said connecting wall, wherein said solid ring of hot melt adhesive fills approximately one-half a depth of the annular gap.

9. (Previously Presented) The tubular coupling element of claim 7, wherein said inner tube further includes an outer surface, having a plurality of longitudinal ribs for producing a centered contact with an inner wall of the fluid line.

10. (Previously Presented) The tubular coupling element of claim 7, wherein said outer tube further includes an inner surface having a plurality of axially parallel grooves distributed over a circumference of said inner surface, wherein said grooves have peaks with an inside diameter that is larger than an outside diameter of the fluid line.

11. (Previously Presented) The tubular coupling element of claim 7, wherein a length of said outer tube is approximately equal to an outside diameter of the fluid line and said inner tube is longer than said outer tube by about one-half the length of said outer tube.

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12. (Currently Amended) A tubular coupling element for producing a glued joint with a fluid line, said tubular coupling element comprising:

an inner tube having a front end and a rear end, wherein said front end is insertable into a fluid line;

an outer tube having a front end and a rear end and an inner surface having a plurality of axially parallel grooves distributed over a circumference of said inner surface, wherein said outer tube is concentric to said inner tube;

a linear connecting wall interconnecting said inner tube rear end ~~and~~ to said outer tube rear end, wherein said outer tube, said connecting wall and said inner tube define one cylindrically shaped annular gap; and

a solid ring of dry hot-melt adhesive disposed within the annular gap and positioned against said connecting wall, wherein said solid ring of adhesive fills about one-half a depth of the annular gap.

13. (Currently Amended) A tubular coupling element for producing a glued joint with a fluid line, said tubular coupling element comprising:

an inner tube that is insertable into the fluid line wherein said inner tube includes a front end and a rear end, and an outer surface having a plurality of longitudinal ribs for producing a centered contact with the fluid line;

an outer tube having a front end and a rear end and having an inner surface having a plurality of axially parallel grooves distributed over a circumference of said inner surface, said grooves having peaks with an inside diameter that is larger than an outside diameter of the fluid line, wherein said outer tube is concentric to said inner tube;

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a linear connecting wall interconnecting said inner tube rear end ~~and to~~ said outer tube rear end, wherein said outer tube, connecting wall and said inner tube define one cylindrically shaped annular gap; and

a solid ring of dry hot-melt adhesive disposed within the annular gap and positioned against said connecting wall, wherein said solid ring of adhesive fills about one-half a depth of the annular gap.

14. (Previously Presented) A method for producing a glued joint between a tubular coupling element and a fluid line, said method comprising the steps of:

providing a tubular coupling element including an inner tube having a front end and a rear end, and the front end is insertable into a fluid line, a connecting wall secured to the inner tube rear end and an outer tube having a front end and a rear end, and extending from the connecting wall, wherein the outer tube is concentric to the inner tube, and the inner tube, outer tube and connecting wall define an annular gap;

providing a solid ring of hot melt adhesive;

pressing the solid ring of adhesive in the annular gap against the connecting wall, wherein the solid ring of adhesive fills about one-half the annular gap;

applying heat to the tubular coupling element so as to melt the solid ring of adhesive;

inserting a free end of the fluid line into the melting adhesive in the annular gap such that the melting adhesive flows around the free end of the fluid line to fill an intermediate space between the free end of the fluid line and the coupling element.

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15. (Previously Presented) The method of claim 14, wherein the solid ring of adhesive has an inside diameter corresponding to an inside diameter of the fluid line, and an outside diameter slightly smaller than an inside diameter of the outer tube.

16. (Previously Presented) The method of claim 14, further comprising the steps of using an induction coil to preheat a free end of the fluid line and melt the solid ring of adhesive.

17. (Previously Presented) The method of claim 16, wherein the free end of the fluid line is pushed onto the coupling element together with the induction coil.

18. (Previously Presented) A method for producing a glued joint between a tubular coupling element and a fluid line, said method comprising the steps of:

providing a tubular coupling element including an inner tube having a front end, a rear end, and an outer surface, and the front end is insertable into a fluid line, wherein the outer surface includes a plurality of longitudinal ribs for producing a centered contact with an inner wall of the fluid line, a connecting wall is secured to the rear end of the inner tube, and an outer tube having a front end and a rear end extending from the connecting wall that is concentric to the inner tube and has an inner surface including a plurality of axially parallel grooves distributed over a circumference of the inner surface, wherein the outer tube, inner tube and connecting wall define an annular gap;

providing a solid ring of hot melt adhesive;

pressing the solid ring of adhesive in the annular gap against the connecting wall, wherein the solid ring of adhesive fills about one-half the annular gap;

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applying heat to the tubular coupling element so as to melt the solid ring of adhesive; and
inserting a free end of the fluid line into the melting adhesive in the annular gap such that
the melting ring of adhesive flows around the free end of the fluid line such that a small portion
of the adhesive flows between the fluid line and the inner tube and a predominant portion of the
adhesive flows between the fluid line and the outer tube.

19. (Previously Presented) The method of claim 18, wherein the solid ring of
adhesive has an inside diameter corresponding to an inside diameter of the fluid line, and an
outside diameter slightly smaller than an inside diameter of the outer tube.

20. (Previously Presented) The method of claim 18, further comprising the steps of
using an induction coil to preheat a free end of the fluid line and melt the solid ring of adhesive.

21. (Previously Presented) The method of claim 20, wherein the free end of the fluid
line is pushed onto the coupling element together with the induction coil.